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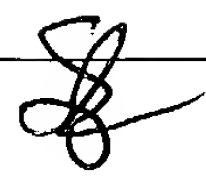
UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,606	04/28/2001	Amir Michaeli	63131	2587

26327   7590   08/24/2004

THE LAW OFFICE OF KIRK D. WILLIAMS
1234 S. OGDEN ST.
DENVER, CO 80210

EXAMINER
ZHEN, LI B

ART UNIT	PAPER NUMBER
2126	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

> A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
> - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
> - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
> - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
>   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _20 May 2004_.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-8 and 13-32_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-8 and 13-32_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All   b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-8 and 13-32 are pending in the application.

Response to Arguments

2.   Applicant's arguments with respect the claims have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1-8 and 13-32 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over U.S. Patent No. 5,838,915 to Klausmeier [cited in previous

office action] in view of U.S. Patent No. 5,875,176 to Sherer.

5.   As to claims 1 and 13, Klausmeier teaches the invention substantially as claimed

including a system for storing information in a data structure, the system comprising:

a distributor [624, Fig. 6];

one or more storage elements for storing a plurality of sub-data structures [622,

Fig. 6 and col. 4, line 25]; and

a receiver [600, Fig. 6];

wherein the distributor distributes a plurality of items to be added to the data

structure in an order; and the receiver receives the items from the data structure in the

order [col. 1, lines 66-67 and col. 6, line 33].

6.   Although Klausmeier teaches the invention substantially as claimed, Klausmeier

does not specifically teach distributing items to a plurality of sub-data structures in an

order and receiving items from the sub-data structures in the order.

However, Sherer teaches distributing items to a plurality of sub-data structures in

an order [sends one (or a group) of packets from all queues containing packets, in the

round-robin order; col. 5, lines 30 - 45] and receiving items from the sub-data structures

in the order [redistribution is accomplished while still preserving the order of packets

sent to any particular destination from any particular source; col. 4, lines 47 – 61].

7.   It would have been obvious to a person of ordinarily skilled in the art at the time

of the invention to apply the teaching of distributing items to a plurality of sub-data

structures in an order and receiving items from the sub-data structures in the order as

taught by Sherer to the invention of Klausmeier because this improves network

parallelism, avoids the transmitter waiting for slower network paths and reduce

bottlenecks developing further down the transmission stream [col. 4, lines 52 – 56 of

Sherer].

8.   As to claims 2 and 14, Klausmeier teaches that each of the sub-data structures

includes a linked-list data structure [col. 2, line 10].

9.   As to claims 3 and 15, Klausmeier teaches a storage for storing a head and a tail

of the linked list data structure of each of the plurality of sub-data structures [704 and

106, Fig. 7].

10.   As to claims 4 and 16, Klausmeier a memory for storing the plurality of sub-data

structures [622, Fig. 7].

11.   As to claims 5 and 17, Klausmeier teaches that the data structure is a linked-list

data structure [col. 2, line 9].

12.   As to claims 7 and 19, Klausmeier teaches that the data structure is a queue [col.

2, line 12].

13.   As to claims 6, 8, 18, and 20, they are rejected for the same reasons as claims 2

and 14 above.

14.   As to claims 29 and 31, Klausmeier as modified teaches the order is a round

robin order among each of the plurality of sub-data structures [col. 5, lines 30 – 45 of

Sherer].

15.   As to claims 30 and 32, Klausmeier teaches the distributor includes a counter to

identifying the order [col. 12, line 30 – 63].

16.   As to claims 21 and 25, Klausmeier as modified teaches a system for storing

information in a data structure, the data structure including a plurality of linked list data

structures [col. 2, line 26 of Klausmeier], the system comprising:

        a head address storage for storing head information for each of the plurality of

linked list data structures [704, Fig. 7 of Klausmeier];

        a head selector for selecting between said head information [904, Fig. 9 of

Klausmeier];

        a tail address storage for storing tail information for each of the plurality of linked

list data structures [706, Fig. 7 of Klausmeier];

        a tail selector for selecting between said tail list information [917, Fig. 9 of

Klausmeier]; and

        a memory for storing a plurality of elements of said information added to the data

structure [622, Fig. 7 of Klausmeier];

        wherein the plurality of elements are distributed to the plurality linked list data

structures in an order [col. 5, lines 30 - 45 of Sherer] and the elements are removed

from the plurality of linked list data structures in the order [col. 4, lines 47 – 61 of

Sherer], the distributing adds no two consecutive elements of the plurality of elements in

the order to the same one of the linked list data structures [sends one…of packets from

all queues containing packets, in the round-robin order; col. 5, lines 30 – 45 of Sherer].

17.   As to claims 22 and 26, these are rejected for the same reasons as claims 21

and 25 above. As to the additional limitations, Klausmeier teaches a data structure

selector mechanism for selecting between the plurality of data structures [col. 9, line

45].

18.   As to claims 23 and 27, Klausmeier as modified teaches a method for adding a

plurality of elements to a data structure, the data structure comprising a plurality of sub-

data structures, the method comprising:

        (a) receiving information to be added to the data structure ["DATA INPUT" Fig. 6

of Klausmeier];

        (b) adding said received information to a currently selected one of the plurality of

sub-data structures to which to add information [807, Fig. 8 of Klausmeier];

        (c) advancing the currently selected one of the plurality of sub-data structures to

which to add information in a predetermined order independent of the received

information [col. 5, lines 30 - 45 of Sherer];

        (d) removing information from a currently selected one of the plurality of sub-data

structures to which to remove information [col. 10, line 13 of Klausmeier];

        (e) advancing the currently selected one of the plurality of sub-data structures to

which to remove information to a next one of the plurality of sub-data structures to which

to removed information in the predetermined order [col. 4, lines 47 – 61 of Sherer]; and

repeatedly performing steps (a)-(c) to add information to the data structure and steps (d)-(e) to remove information from the data structure [col. 6, lines 44-45 and col.9, lines 25-26 of Klausmeier].

19. As to claims 24 and 28, these are rejected for similar reasons as claim 23 and 27 above. As to the additional limitations, Klausmeier further teaches identifying one of the plurality of data structures to which to add the received information [col. 7, line 51], and identifying one of the plurality of data structures to which to remove a piece of stored information [904, Fig. 9].

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent NO. 6247061 to Douceur et al. teaches scheduling network communication packets.

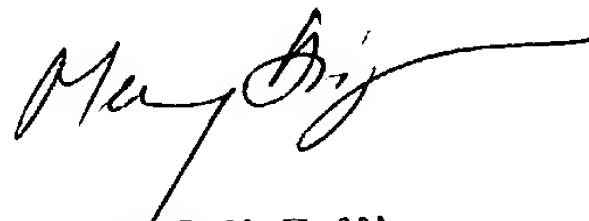U.S. Patent NO. 6683884 to Howard teaches shared credit round robin queueing.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

                                             Li B. Zhen
                                             Examiner
                                             Art Unit 2126

lbz
August 18, 2004

                              MENG-AI T. AN
                         SUPERVISORY PATENT EXAMINER
                           TECHNOLOGY CENTER 2100